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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,012	10/19/2000	David G. Boyers	101900	7407

7590

06/25/2002

Joseph H Smith  
4410 Casa Madeira Lane  
San Jose, CA 95127

EXAMINER
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WINTER, GENTLE E

ART UNIT	PAPER NUMBER
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1746

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DATE MAILED: 06/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/693,012

Applicant(s)

BOYERS ET AL.

Examiner

Gentle E. Winter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-119 is/are pending in the application.
- 4a) Of the above claim(s) 30,40-115 and 117-119 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29,31-39 and 116 is/are rejected.
- 7) ☐ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) 30,40-115 and 117-119 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-29, 31-39, 116 drawn to a method for treating a material, classified in class 134, subclass 2+.
  - II. Claims 40-50, 100, 101, and 112-115 drawn to a device for treating a material, classified in class 134, subclass 105+.
  - III. Claims 51-76, and 117 drawn to a method for treating a material, classified in class 134, subclass 34+.
  - IV. Claims 77-99, drawn to a system for treating a substrate with ozone-solvent solution, classified in class 134, subclass 94.1+.
  - V. Claims 30, 102, and 103, drawn to a system for the treatment of an article for the purpose of sterilizing, disinfecting, or modifying the surface, classified in class 422, subclass 244.
  - VI. Claims 104-109, drawn to a system for treating a substrate, classified in class 134, subclass 61+.
  - VII. Claims 118-119, drawn to an ozone-solvent solution supply, classified in class 138, subclass 198.
2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product

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as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using that product. Specifically, the “means for forming an ozone-solvent solution at a first temperature” could also be used for forming carbonated water. The means for “reacting the ozone-solvent solution with the material” could be a nozzle used to fill a soda bottle containing syrup. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as a concentration gradient, multi-step cleaning process. Specifically the heated solution of invention III, has a lower ozone concentration than the solution of invention I and would be used as a fine (slow etch rate) final step or preliminary step. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group III, restriction for examination purposes as indicated is proper.

4. Inventions I and IV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP

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§ 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product. Specifically, invention I can be practiced with an ozone-generating source, a chiller, and a tank. Necessarily the solution would warm as it travels through the coupler. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group IV, restriction for examination purposes as indicated is proper.

5. Inventions I and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as disinfecting a substrate. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Inventions I and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VI has separate utility such as a robot-driven substrate handling component. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group VI, restriction for examination purposes as indicated is proper.

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7. Inventions I and VII are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a means other than a venturi injector could be used in the creation of an ozone-solvent solution supply. The subcombination has separate utility such as a means for a swimming pool algaecide.

8. Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as a concentration gradient, multi-step cleaning process. Specifically, the heated solution of invention III has a lower ozone concentration than the solution of invention II and would be used as a fine (slow etch rate) final step or preliminary step. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group III, restriction for examination purposes as indicated is proper.

9. Inventions II and IV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP

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§ 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product. Specifically, invention I can be practiced with an ozone-generating source, a chiller, and a tank. Necessarily the solution would warm as it travels through the coupler. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group IV, restriction for examination purposes as indicated is proper.

10. Inventions II and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as disinfecting a substrate. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

11. Inventions II and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VI has separate utility such as a robot-driven substrate handling component. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group VI, restriction for examination purposes as indicated is proper.

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12. Inventions II and VII are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a means other than a venturi injector could be used in the creation of an ozone-solvent solution supply. The subcombination has separate utility such as a means for a swimming pool algacide.

13. Inventions III and IV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product. Specifically, invention I can be practiced with an ozone-generating source, a chiller, and a tank. Necessarily the solution would warm as it travels through the coupler. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group IV, restriction for examination purposes as indicated is proper.

14. Inventions III and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be



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separately usable. In the instant case, invention I has separate utility such as disinfecting a substrate. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

15. Inventions III and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VI has separate utility such as a robot-driven substrate handling component. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group VI, restriction for examination purposes as indicated is proper.

16. Inventions III and VII are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a means other than a venturi injector could be used in the creation of an ozone-solvent solution supply. The subcombination has separate utility such as a means for a swimming pool algacide.

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17. Inventions IV and V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as disinfecting a substrate. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

18. Inventions IV and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VI has separate utility such as a robot-driven substrate handling component. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group VI, restriction for examination purposes as indicated is proper.

19. Inventions IV and VII are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a means other than a venturi injector could be used in the creation of an ozone-solvent solution supply. The subcombination has separate utility such as a means for a swimming pool algaecide.

20. Inventions V and VI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention VI has separate utility such as a robot-driven substrate handling component. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group VI, restriction for examination purposes as indicated is proper.

21. Inventions V and VII are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a means other than a venturi injector could be used in the creation of an ozone-solvent solution supply. The subcombination has separate utility such as a means for a swimming pool algacide.

22. Inventions VI and VII are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as

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claimed because a means other than a venturi injector could be used in the creation of an ozone-solvent solution supply. The subcombination has separate utility such as a means for a swimming pool algaecide.

23. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

24. During a telephone conversation with Joseph H. Smith on or about June 4, 2002 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-29, 31-39, and 116. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30, 40-115 and 117-119 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Specification***

25. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. It has been noted that there appear to be some informalities in the listing of the various advantages of the present invention in the Summary of the Invention. See specifically page 5, lines 25, 27, 28, and 34. Relevant

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punctuation and associated case change appears to be lacking. But see page 6, line 6. Also see page 67, line 9 reference to "3<sup>nd</sup>".

26. The use of the trademarks "ASTEX" "SEMOZON" "CARULYTE 200" TEFLON" "SHIPLEY" and "EXERGY" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

27. Claim 8, 9, 10, 11, 14-16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the term "rapidly" in claim 8 is a relative term which renders the claim indefinite. The term "rapidly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 102***

28. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

29. Claim 1-12, 16, 23-26, 28, 29, 31, and 33-37 are rejected under 35 U.S.C. 102(b) as being anticipated by *The Effect Of Temperature on an Ozonated Water Photoresist Strip Process* by Nelson et al. Nelson et al. disclose forming an ozone solvent solution at a first temperature; and reacting the ozone-solvent solution with the material at a second temperature; wherein the first temperature is less than the second temperature, the relatively lower first temperature facilitating an increased concentration of dissolved ozone in the solvent, the relatively higher second temperature facilitating an increased reaction rate between the ozone-solvent solution and the material. Specifically, Nelson achieves this by providing a high concentration  $\text{DIO}_3$  solution (wherein the concentration of ozone is a function of temperature, which is 21.5C and pressure) and selectively commingling DI water of various temperatures (21.5-95C). The disclosed flow rates are such that final solution temperature would fall within the range of 35-60C. i.e. 7.6 liters/minute at 95C and 15 liters/minute at 21.5C. Nelson et al. disclose that the “effects higher temperatures on  $\text{O}_3$  such as ...lower solubility...occur on a time scale much longer than the time that the  $\text{DIO}_3$  is on the wafer surface.” Thus Nelson et al. effectively minimize a decrease in concentration of the dissolved ozone in the ozone-solvent solution resulting from heating the ozone-solvent solution. Nelson et al. further disclose the use of at least one nozzle for applying the solution, and reacting the  $\text{DIO}_3$ /DI solutions with the material at the second temperature (the mixing/heating takes place on the material). The wafer in Nelson et al. “rotated at 500 rpm” and the nozzles are positioned over the substrate. Nelson et al. also disclose the use of the solution on wafers for the purpose of removing photoresist. See page 190. It is observed that the material would be heated by the material’s contact with the heated stream.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claims 14, 15, 27, 32, and 38 are rejected under 35 U.S.C. 103(a) as being obvious over *The Effect Of Temperature on an Ozonated Water Photoresist Strip Process* by Nelson et al., in view of United States Patent No. 5,716,458 to Machino. Nelson et al. fail to explicitly disclose that a heat exchanger or in-line heater may be used to provide the requisite heat. Such heating elements are disclosed in Machino. Machino discloses:

[t]he heater 11 may comprise any of that type of heaters which directly heat the mixture 1 using electricity or other heat sources, or may comprise any of that type of heaters which indirectly heat the mixture 1 using, for example, a heat exchanger which provides heat exchange between the directly heated heat transfer medium and the mixture 1. (Column 5, line 57 *et seq.*)

The artisan would have been motivated to make the instant combination because such a combination obviates the need for transport heated liquid from a distant heater, and also minimizes thermal variation and waste during start-up. (Column 6, line 13 *et seq.*) With particular respect to claims 27 and 32, it is well settled in the cleaning arts that the cleaning solution is rinsed off. To explicitly claim such a step, implicitly suggests that the step is not necessarily present in the independent claim. While it is a widely held view that a rinsing step is

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inherently present, Machino et al. does explicitly disclose a rinsing step (column 26, line 47).

The motivation for including a rinsing step, as is well known in the art, is to remove cleaning solution (which may be a contaminant) and to remove particulate that has been loosened, but not removed, by the cleaning solution, or to remove contaminants that may have been re-deposited by re-circulating the cleaning the solution.

31. Claims 17, 18, 19, 20, and 39 are rejected under 35 U.S.C. 103(a) as being obvious over *The Effect Of Temperature on an Ozonated Water Photoresist Strip Process* by Nelson et al., in view of United States Patent No. 5,567,444 to Hei et al. Hei discloses that acetic acid, is an acid scavenger. Each and every limitation of claims 17-20 is identically disclosed by Nelson et al. as set forth above, except Nelson et al. does not explicitly disclose injecting and/or injecting and mixing a chemical into the ozone-solvent solution prior to reacting the ozone-solvent solution with the material. Further, Nelson et al. fail to disclose that the injected chemical comprise a corrosion inhibitor, and a surfactant. Hei et al. disclose the desirability of corrosion inhibitors (column 3, line 35 *et seq.*) and surfactants (column 4, line 19 *et seq.*) in ozone solutions. The artisan, at the time the invention was made would have been motivated to combine the teaching of Nelson et al. with Hei et al. for the reason explicitly set forth be Hei et al. Specifically, corrosion protection is desirable in when certain components are to be selectively removed. The addition of a corrosion inhibitor improves selectivity. Similarly, surfactants enhance surface wetting and can enhance mass transfer. The artisan further would have been motivated to inject and mix the chemical(s) into the ozone solution prior to reacting the ozone-solvent solution with the material, because absent the addition prior to reacting the solution the ingredients would not



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serve their purpose. With respect to claim 18, the open language allows for a mixing step, either as an artifact of the application or as an explicit step. Thus, arguably this step is explicitly taught, (i.e. no mixing step is identically disclosed) or is inherently present. If it is applicant's contention that the chemicals do not form a solution with the ozone-solvent solution, this needs to be made explicit, i.e. with closed claim language. A buffer is disclosed by Hei et al. (boric acid table 6) the artisan would have been motivated to use the buffer for the reason cited throughout the art, and by Hei et al., namely controlling the pH. Ozone solubility is disclosed to be strongly dependant on pH. (Column 8, line 63). With respect to claim 30, the Hei et al. patent is drawn to a sanitizing composition, intended to remove microorganisms from a surface. It is noted that it is inherent to the operation of the system of Hei et al. that the fluid sources are operatively coupled to deliver fluid from their respective sources to the material that is cleaned.

32. Claims 17, 18, 21, and 22 are rejected under 35 U.S.C. 103(a) as being obvious over Reference *The Effect Of Temperature on an Ozonated Water Photoresist Strip Process* by Nelson et al., in view of reference *Decomposition of Ozone in Aqueous Acetic Acid Solutions* by Sehested et al. Each and every limitation of claims 17, 18, 21, and 22 is identically disclosed by Nelson et al. as set forth above, except Nelson et al. does not explicitly disclose injecting and/or injecting and mixing a chemical into the ozone-solvent solution prior to reacting the ozone-solvent solution with the material. Further, Nelson et al. fail to disclose that the injected chemical comprise a hydroxyl radical scavenger and an acid. Sehested et al. disclose that "acetic acid is a well known stabilizer of aqueous ozone solutions, and that acetic acid is known to scavenge the OH radical, which is the chain propagating radical in ozone decomposition."

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Because it is desirable to avoid ozone decomposition (at least in solution) the artisan would have been motivated to make the instant combination. The motivation for the manner of mixing is the same as set forth above.

***Allowable Subject Matter***

33. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

34. Applicant is thanked for a comprehensive information disclosure statement. Which is considered to be an excellent indication of the state of the art in the relevant fields. Most, if not all the documents submitted, are relevant to patentability.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

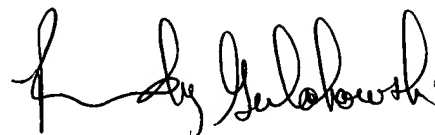
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter  
Examiner  
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June 7, 2002

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with the first name "Randy" and last name "Gulakowski" clearly distinguishable.

RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700